

RIZKIN, A.A.; SHUMLYANSKIY, I.I.; KHROMYKH, M.K.

Concerning the academic plans of radio engineering departments.

Izv. vys. ucheb. zav.; radiotekh. 4 no.4:504 J1-Ag '61.

(MIRA 14:11)

1. Odesskiy elektrotekhnicheskiy institut svyazi.
(Radio)

KHROMYKH, N.P.

Measurement of base lines in second-order triangulation. Geod.1
kart. no.6:11-13 Je '62. (MIRA 15:8)
(Base measuring) (Triangulation)

33157

S/120/61/000/006/028/041
E032/E514

24.6830

AUTHORS: Kotel'nikov, K.A., Ogurtsov, O.F. and Khromykh, N.Ye.
TITLE: The use of plutonium α -sources in an "ionization calorimeter"

PERIODICAL: Priory i tekhnika eksperimenta, no.6, 1961, 126-127

TEXT: It is pointed out that large arrays of ionization chambers are being widely used in cosmic ray studies to determine the energies of electron-nuclear showers produced by cosmic ray particles. It is necessary to maintain the purity of the working gas in these chambers. The purity is usually controlled with the aid of a 0.1-0.5 μC Co^{60} specimen and pulses due to this source are used to determine the working conditions. The present authors put forward a different method of controlling the operation of ionization chambers. In this method each ionization chamber contains an open Pu^{239} α -source deposited electrolytically on a stainless steel disc and having an activity of $5 \cdot 10^5$ disintegrations per minute. Pu^{239} has the advantage that in addition to the 5.1 MeV α -particles it gives only soft γ -rays which are easily absorbed by the walls of the

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EO32/E514

The use of plutonium α -sources ... chamber, while the daughter element U^{239} is formed with a half-life of $7.13 \cdot 10^8$ years so that the decay products do not contaminate the chamber. Finally, tests have shown that radioactive aerosols are not formed above an open Pu^{239} α -source. The practical arrangement is illustrated in Fig.1. While the chamber is being tested the switch 2 is in position I and pulses due to α -particles are recorded on the screen of a CRO. The purity of the gas is deduced from the amplitude and form of the pulses. Under working conditions the switch is in position II, i.e. the α -source is kept at +600 V relative to the body of the chamber and all the electrons produced by the α -particles are collected by the specimen itself so that the operation of the chamber is unaffected by the presence of the source. There are 1 figure and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc. The English-language reference reads as follows: Ref.5: U.Facchini, A. Malvicini, Nucleonics, 1955, 13, No.4, 36.

ASSOCIATION: Fizicheskii institut AN SSSR (Physics Institute AS USSR)

SUBMITTED: April 18, 1961
Card 2/2

KHROMYKH, V.

ZINCHENKO, V., kandidat tekhnicheskikh nauk; KHROMYKH, V., inzhener.

Characteristics of marine engines operating with gas valve plungers. Mor.flot 17 no.5:12-15 My '57. (MIRA 10:7)

1. Tsentral'nyy nauchno-issledovatel'skiy institut morskogo flota (for Khromykh).

(Marine engines)

KHROMYKH, V.A.

Investigating dynamics of marine diesel fuel supply using staged
fuel injection. Trudy TSHIIMF no.20:3-26 '58. (MIRA 12:1)
(Marine diesel engines--Fuel consumption)

KHROMYKH, V.A.; YEL'NIK, A.G.

Study of the main marine power plant of the motorship "Ugleural'sk."
Inform.sbor.TSNIIMF no.52. Tekh.ekspl.mor.flota no.5:49-60 '60.
(MIRA 15:2)

(Marine diesel engines)

YEL'NIK, A.G., inzh.; PUSTYNSKIY, G.I., inzh.; KHROMYKH, V.A., inzh.

Ships of the "Ugleural'sk" type. Sudostroenie 26 no. 3 (1983), 1-4
No. 14:11 (MIRA 14:11)

(Freighters)

KHROMYKH, Viktor Aleksandrovich; MART'YANOVA, I.Ya., red.

[Regulating the main engines of new, series-built motorships] Regulirovanie glavnykh dvigatelei teplokhodov novoi seriinoi postroi. Moskva, Transport, 1964. 106 p. (MIRA 18:1)

ACC NR: AP0019712

(A)

SOURCE CODE: DR/0413/66/006/009/0125/0126

INVENTOR: Khromykh, V. A.; Demchenkov, N. I.; Stankevich, V. V.

ORG: None

TITLE: A diesel fuel pump with two-phase feed. Class 46, No. 181447

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 125-126

TOPIC TAGS: diesel engine, engine fuel system, engine fuel pump

ABSTRACT: This Author's Certificate introduces: 1. A diesel fuel pump with two-phase feed containing a sleeve with a plunger. The plunger has an additional shoulder for distributing fuel. An intake area in the housing communicates with the high pressure area above the plunger. The unit is equipped with a push rod driven by a cam. In order to improve fuel delivery, the intake area is connected with the area above the plunger by means of two or more channels located at various levels with respect to the height of the sleeve. 2. A modification of this device which contains an automatic intake valve in the force line to ensure preignition regardless of engine operating conditions.

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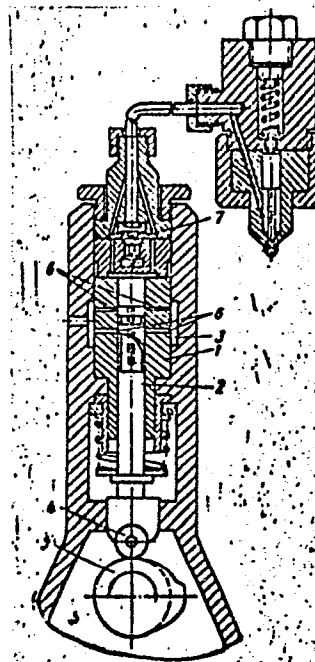
UDC: 621.43.031

ACC NR: AP6015712

1--sleeve; 2-- plunger; 3--intake area;
4--push rod; 5--cam; 6--channels;
7--automatic force valve

SUB CODE: 2A / SUBM DATE: 26Apr65

Card 2/2



PUSHKIN, P.S., kand.tekhn.nauk; GOLOSOVSKIY, V.V., inzh.; KHROMYKH, V.I., inzh.

Technical and economic calculations of tie diagrams. Sbor.trud.-
LIIZHT no.198:50-67 '62. (MIRA 16:7)

(Railroads—Ties)

KAROLIM, A.Ye. (Leningrad); KHROMYKH, V.I. (Leningrad)

Improved technology of track alignment. Put' 1 put. khoz. 9
no.10:12-13 '65. (MTRA 18:10)

L 25121-65 EMT(m)/EFT(c)/EFT(n)-2/EPR Pr-L/Ps-L/Pu-L

ACCESSION NR: AP4047434

Z/0038/64/000/010/0357/0364

AUTHOR: Bartosek, V. (Bartoshek, V.); Hron, M. (Khron, M.); Lelak, Y.,
Neprashova, M. (Neprashova, M.)

Some physical problems in the design of heavy-water reactors

Atomnaya energiya, no. 10, 1964, pp. 10-11

TOPIC TAGS: uranium burn up, heavy water reactor, fuel element refueling, fuel
element, heavy water reactor, multiphase flow, neutron flux

This article reports on the investigation of the dependence of the
multiplication constant on attainable uranium burn-up under steady-state reactor
conditions during the continuous refueling of the reactor.

One fuel returns after reaching the second base. The results of the calcula-
tions are analyzed with the aid of computers, i.e., the local multiplication con-
stant which provides the initial information for the calculation of the next
cycle.

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1. 15121-45

ACCESSION NR: AP4047434

with fuel shuffling is examined; the most efficient methods for reactor transition from the initial state to the steady state are also described. The technical and economic parameters which find application in the design of a reactor are transition with continuous refueling. In all, eight methods are described, in which the neutron flux is increasing in each element of an element in one fuel.

OTHER: 001

OTHER: 001

KHROMIN, D. V.

PHASE I

BOOK I

Authors: SKUBACHEVSKIY, G. S. and KHROMIN, D. V.

Call No.: TL701.5715

Full Title: AIRCRAFT PROPELLER-ENGINE MOUNTS

Transliterated Title: Vintomotornye ustanovki samoletov.

Publishing Data

Originating Agency: None

Publishing House: State Publishing House of the Defense Industry (Oborongiz)

Date: 1946

No. pp.: 235

No. copies: 7,000

Editorial Staff

Editor: None

Ed.-in-Chief: None

Tech. Ed.: None

Appraiser: None

Text Data

Coverage: Various systems of aircraft propeller-engine mounts and their specifications are discussed, and their parts and methods of calculation described. Some problems of function and operation are explained.

Purpose: Approved by the Board of Education of the Ministry of the Aircraft Industry as a textbook for students of aeronautical institutions of higher learning. It was edited in conformity with the program of the

Moskva Aviation Institute im. Sergo Ordzhonikidze.

Facilities: Moskva Aviation Institute im. Sergo Ordzhonikidze and the Central Aero-Hydrodynamical Institute im. N. E. Zhukovskiy

No. Russian and Slavic References: 46

Available: Library of Congress.

AUTHOR: Khronin, D.V.

SOV/147-58-1-21/22

TITLE: Coupled Oscillations of Shafts, Discs and Rotor Blades of
Turbine Compressors and their Critical Frequencies
(Sovmestnyye kolebaniya diskov valov i lopatok rotorov
turbokompressornykh mashin i kriticheskiye chisla oborotov)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy,
Aviatsionnaya Tekhnika, 1958, Nr 1, pp 171-178 (USSR).

ABSTRACT: The oscillations of parts of a rotor, which appear in
the form of resonance oscillations of blades, shafts or its
other parts, arise as a result of the elastic dynamic inter-
action of the rotor components. Usually, these oscillations
are considered as independent, without taking into account the
interaction of adjacent components. With such an approach, it
is not possible to give a deeper analysis of the vibrational
phenomena occurring in turbine compressors and there is also
the possibility of errors being made, particularly in analysing
thin-walled structures with long blades. This paper discusses
the coupled oscillations of shafts, discs and blades of the
rotor of a turbine compressor. The solution is derived by the
application of the concept of dynamic stiffness. Consider,
for example, the precession of a disc about an axis OZ_0 fixed

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Coupled Oscillations of Shafts, Discs and Rotor Blades of Turbine
Compressors and Their Frequencies

SOV/147-58-1-21/22

in space and let the axis OZ be fixed in the disc perpendicular to its face. Then, the dynamic stiffness in precession is defined as the ratio of the dynamic moment created by the disc in its precession in the plane ZOZ_0 to the angle of nutation ZOZ_0 . Results obtained both in theoretical investigations and in practical calculations can be compared with those given by special experiments. The form of the oscillations of the separate parts of the rotor, as well as the resonance frequencies of the coupled oscillations can be determined by the method. There are 1 figure and 3 references, 2 Soviet and 1 English.

ASSOCIATION: Kafedra konstruktssii aviadvigateley, Moskovskiy
aviatsionnyy institut (Chair of Aircraft Engine Construction,
Moscow Aviation Institute)
November 5, 1957

SUBMITTED:

Card 2/2

1. Shafts--Oscillation 2. Disks--Oscillation 3. Rotor blades
--Oscillation 4. Rotary compressors--Performance 5. Vibration
--Analysis

KHRONIN, D.V.

PHASE I BOOK EXPLOITATION

SOV/3985
SOV/11-M-100

Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze

Izhibnyye kolebaniya detaley gazoturbinnnykh aviadvigateley; sbornik statey
(Bending Vibrations of Aircraft Gas-Turbine Components; Collection of
Articles) [Moscow] Oborongiz, 1959. 84 p. Errata slip inserted.
(Series: Its: Trudy, vyp. 100) 2,150 copies printed.

Ed.: G.S. Skubachevskiy, Doctor of Technical Sciences, Professor;
Ed.: S.I. Bumshteyn, Engineer; Managing Ed.: A.S. Zaymovskaya, Engineer;
Ed. of Publishing House: S.I. Vinogradskaya; Tech. Ed.: V.I. Oreshkina.

PURPOSE: This collection of articles is intended for personnel of scientific
research institutes and design offices, and also for aspirants, instructors,
and students of special courses at schools of aeronautical engineering.

COVERAGE: The collection consists of two papers on the results of theoretical
and experimental research on vibrations of the rotor and the casing of air-
craft gas turbines. Methods for calculating the vibration frequencies are
given, and calculation examples and recommendations are presented. Soviet

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Bending Vibrations of Aircraft (Cont.)

80V/3985

scientists A.F. Gurov and V.K. Zhitomirskiy are mentioned in the first paper.
References accompany both papers.

TABLE OF CONTENTS:

Preface [G.S. Skubachevskiy]

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Kryukov, K.A., Candidate of Technical Sciences, Docent.
Coupled Bending Vibrations of the Rotor and Casing of an
Aircraft Gas Turbine

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This paper presents an analytical method for calculating coupled vibrations of a turbojet engine which takes into account the deformations of the rotor bearings and bearing supports as well as the deformation of other components of the engine. A simplified treatment is given for first identifying approximately the spectrum of critical frequencies and rotational velocities, following which a more complex but more accurate calculation is made to determine these parameters.

Khronin, D.V., Candidate of Technical Sciences, Docent. Coupled
Bending Vibrations of Shafts and Disks

60

In contrast to the usual assumption of an infinitely rigid disk, the treatment in this paper takes into account the bending

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E191/E581

26.1000

AUTHOR: Khronin, D. V.

TITLE: Analysis of Vibrations and Critical Rotational Speeds in the Discs of Turbo-Machinery, Taking into Account the Effect of the Blades

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1960, Nr 1, pp 140-148 (USSR)

ABSTRACT: The free vibrations of rotating discs, which have a phase velocity, are considered and methods of solution are presented to compute the phase velocities of the free vibrations and the critical rotational speeds, taking into account the effect of the blades. A disc is considered rotating at a certain speed in which a deformation wave with several nodal diameters is rotating at another speed. Owing to the difference, points of the disc will carry out harmonic oscillations. The equation of flexural oscillations of a rotating disc is formulated and the solutions expressed in terms of sums of Bessel

Card 1/3 functions, for the case of a disc with constant thickness,

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Analysis of Vibrations and Critical Rotational Speeds in the
Discs of Turbo-Machinery, Taking into Account the Effect of the
Blades

loaded only at the periphery and having equal stresses at all points. This case is of practical importance for thin turbine and compressor discs. When the disc has a straight tapered profile and the centrifugal loading arising in the mass of the disc itself is also significant, the solutions can be expressed by power series. A small number of terms is adequate when the reduction of thickness is moderate. Another type of power series is applicable to discs of hyperbolic profile. In applying these solutions, the constants of integration are obtained from the boundary conditions at the shaft and periphery of the disc. The latter introduce the effect of the blades. This is expressed by the dynamic stiffnesses from which the bending moment and shear force at the disc periphery are obtained. The dynamic stiffnesses for simple blade shapes are given analytically. Card 2/3 Finally, the frequency equation is obtained. A typical

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Discs of Turbo-Machinery, Taking into Account the Effect of the
Blades

relation between the wave speed and the disc speed is illustrated in Fig 5. The wave speed increases with the disc speed, owing mainly to the stiffening effect of the blades. A graphical presentation of the absolute wave speed in relation to stationary coordinates plotted against the disc speed is a convenient way of determining the critical speeds which are the points of zero absolute wave speed, in other words, where standing waves are possible.

There are 6 figures and 11 Soviet references.

ASSOCIATION: Kafedra konstruksii aviadvigateley, Moskovskiy
aviatsionny institut (Chair of Aircraft Engine Construction,
Moscow Aviation Institute)

SUBMITTED: May 14, 1959
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4

S/535/61/000/136/003/006
E191/E381

26.2120

AUTHOR: Khronin, D.V., Candidate of Technical Sciences, Docent

TITLE: Computation of the critical speeds of shafts in turbo-machinery taking into account the deformation of discs and blades

SOURCE: Moscow. Aviatsionnyy institut. Trudy. no. 136. 1961. Nekotoryye voprosy issledovaniya kolebaniy v aviatsionnykh dvigatelyakh. 40 - 56

TEXT: When the true flexibility of the discs and blades is taken into account, the critical speed of a rotor shaft lies between the value computed on the assumption that each disc is replaced by a single mass (equivalent to completely flexible discs) and the value for rigid discs. An example is used to illustrate that, for a typical shaft with an overhung turbine disc, the difference between the limiting values can reach 50 and even 100%. The dynamic stiffnesses of the discs are introduced in place of the moments of inertia. These dynamic stiffnesses are functions of the shaft speed. They enter into the computation scheme for the critical speeds. The simple solution

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Computation of

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for a single disc rotor is shown, in principle, for the case of the direct synchronous precession. The general equation of deformation of a precessing and oscillating disc, as previously given by the author (Ref. 1: Izvestiya VUZ, Aviatsionnaya tekhnika, no. 1, 1958) is recited and the derivation of the dynamic stiffness of a disc is given, taking the effect of the blades into account. The cases of a rimless disc and of a disc with a wide rim are considered separately. Another simplified derivation for the dynamic stiffness of a disc is given for the case of a constant-thickness, massless disc, loaded with the forces arising from the masses of the blades. This assumption does not lead to a great error because, in turbine discs, the mass of the blades is predominant. An example illustrates a graphical method of determining the critical shaft speed. Compared with the speed found by the present method, the rigid-disc assumption yields a speed higher by 65%. The single-mass assumption yields a critical speed which amounts to 57% of the value computed here. There are 9 figures and 2 Soviet-bloc references. ✓

Card 2/2

PLAVINSKIY, A., inzh.; KHRONOPULO, G., inzh.

Mechanized crib-type storage barn for potatoes. Sel'. strol.
16 no.1; insert; 7-8 Ja '62. (MIRA 16:1)
(Potatoes—Storage)

KHRONOPULO, L. V.

Khronopulo, N. P., Khronopulo, L. V. and Malikov, D. I. "Ways of increasing the impregnation of sheep and the breeding of more successful offspring," Sbornik nauch. rabot (Vsesoyuz. nauch.-issled. in-t ovtsevodstva i kozovodstva); Issue 17, 1948, p. 213-31, - Bibliog: 14 items

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949.)

KHRONOPULO, N. P.

Khronopulo, N. P. - "The significance of the temperament of sheep on the practicability of artificial insemination", Sbornik nauch. rabot (Vsesoyuz. nauch.-issled. in-t ovt-sevodstva i kozovodstva), Issue 16, 1948, p. 139-54, - Bibliog: 7 items.

So: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 7, 1949).

KHRONOPULO, N. P.

Khronopulo, N. P., Khronopulo, L. V. and Malikov, D. I. "Ways of increasing the impregnation of sheep and the breeding of more successful offspring," Sbornik nauch. rabot (Vsesoyuz. nauch.-issled. in-t ovtsevodstva i kozovodstva), Issue 17, 1948, p. 213-31, - Bibliog: 14 items

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949.)

KHRONOPULO N.P.

USSR / Farm Animals. Wild Animals.

U-8

Abs Jour : Ref Zhur - Biologiya, No 16, 1957, 72128

Author : *Khronopulo, N.P.*

Title : The Effect of Light on the Mink Fur.

Orig Pub : Priroda, 1956, ⁴⁵No 4, 108-109

Abstract : Young Minks in artificial surroundings reach adult size at the age of 4-4½ months of age; the maturing of fur takes another 2½ to 3 months. In 1954, on the farm of the Institute of Rabbit and Animal Breeding, it was attempted to grow the young minks under conditions of 5-hour daylight. The experimental animal fur matured over a month before that of the controls.

*Научно-исследовательский кролиководства и
звероводства.*

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USSR/Farm Animals. Fur Animals.

Q-4

Abs Jour: Ref Zhur - Biol., No. 22, 1958, 101248

Author : Khronopulo, N.P., Drozdova, L.P.

Inst : -

Title : Light Regimen and Sexual Functions in Minks
(Lutreola vison).

Orig Pub: Zool. zh., 1957, ^{3/4} No. 6, 938-945

Abstract: The experiments were carried out on 34 female and 10 male minks divided into 3 groups. The 1st and 2nd groups were kept in artificial lighting conditions and were then transferred to gradually growing daylight conditions; the 3rd group served as a control group and was kept in natural lighting conditions. Under special lighting conditions, spermatogenesis processes

Card 1/1. Nauchno-issledovatel'skiy institut krolikovodstva i pushnogo
sverovodstva i kafedra zoologii i darvinizma Vsesoyuznoy sel'
skokhozyaystvennoy akademii im. K.A. Timiryazeva.

KUZNETSOV, Georgiy Alekseyevich; LEPESHKIN, Vladimir Ivanovich;
KHONOPULO, M.P., red.; FOMICHEV, P.M., skhn.red.

[Raising for-bearing animals; practical manual] Razvedenie
pushnykh zverei; prakticheskoe posobie. Moskva, Izd-vo
TSentrosoiuza, 1958. 82 p. (MIRA 12:12)
(Fur-bearing animals)

86856

S/141/60/003/005/011/026
E192/E382

91300 (also 1006)

AUTHORS: Averkov, S.I. and Khronopulo, Yu.G.

TITLE: Electromagnetic Waves in Lossy Systems with
Time-dependent Parameters

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiofizika, 1960, Vol. 3, No. 5, pp. 818 - 825

TEXT: It is assumed that the permeability and permittivity μ and ϵ of the medium are variable and that the medium does not contain any charges or currents. The Maxwell equations for the system can be written as:

$$(I) \operatorname{rot} \underline{B} = \mu(t) \frac{\partial \underline{D}}{\partial t}; \quad (III) \operatorname{div} \underline{B} = 0;$$

$$(II) \operatorname{rot} \underline{D} = -\epsilon(t) \frac{\partial \underline{B}}{\partial t}; \quad (IV) \operatorname{div} \underline{D} = 0$$

where the vectors \underline{B} and \underline{D} and the magnetic and electric-field vectors \underline{H} and \underline{E} are related by:

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Electromagnetic Waves in Lossy Systems with Time-dependent Parameters

$$(V) \quad \underline{B} = \mu(t)\underline{H}, \quad (VI) \quad \underline{D} = \epsilon(t)\underline{E}.$$

On the waves of an ideally conducting metal wall, the vectors \underline{B} and \underline{D} satisfy the following boundary conditions:

$$(VII) \quad \underline{B}_n = 0, \quad (VIII) \quad \underline{D}_{tan} = 0.$$

The solution of the above equations is based on the method of separating the variables. Thus, it is assumed that \underline{B} and \underline{D} can be expressed by Eqs. (1) and (2) where f and θ are certain non-dimensional functions of time, while the vectors \underline{B}_a and \underline{D}_a are dependent on coordinates only. From the above equations the relationship between \underline{B}_a and \underline{D}_a is expressed by Eqs. (3) and (4). On the other hand, the relationship between θ and f is expressed by Eqs. (5) and (6),
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where ω is a certain constant and μ_0 and η_0 are the constants of free space. The vectors \underline{B}_a and \underline{D}_a satisfy the Maxwell equations and the boundary conditions with respect to monochromatic oscillations of frequency ω . In particular, it follows that \underline{B}_a obeys :

$$\Delta \underline{B}_a + \mu_0 \epsilon_0 \omega^2 \underline{B}_a = 0 \quad (7)$$

where k is the wave number (defined by Eq. 8) and ω is given by Eq. (9), where c is the velocity of light in vacuum. The expression for θ can also be written as Eq. (10) so that the final expression for the function $f(t)$ is in the form of Eq. (11); a similar equation for $\theta(t)$ is in the form of Eq. (12). The energy carried by a wave is expressed by the usual Poynting vector, which is given by

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Eq. (13). The above formulae are used in the investigation of the propagation of waves in a simple dispersive medium, i.e. a waveguide filled with a medium whose permeability is a function of time and ϵ is constant. Eq. (1) can now be written as Eq. (15), where $c = k^2/\epsilon$. It is assumed that $\mu(t)$ varies in accordance with:

$$\mu(t) = (\alpha - \beta t)^2 \quad (16)$$

where α and β are constants. Consequently, depending on the magnitude of the quantity R , which is expressed by Eq. (17), the solutions for f are in the form of Eqs. (18), (19) and (20), where Q and F are constants. The case represented by the Eqs. (18) is analysed in some detail. It is assumed that a $TE_{m,n}$ -wave propagates in the waveguide.

The components of the vectors \underline{B}_a and \underline{D}_a are given by
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Electromagnetic Waves in Lossy Systems with Time-dependent Parameters

Eqs. (21). Thus, the component B_z of the vector \underline{B} is given by Eq. (22). It is seen that this depends on three arbitrary constants h , Q and Φ and two integer variables n and m . If it is assumed that for times less than zero $\mu(t) = \text{const}$, the B_z component of the vector \underline{B} can be expressed by Eq. (23). By considering the initial conditions at $t = 0$, it is possible to determine the constants of Eq. (22). The final expression for B_z is in the form of Eq. (29). From this it is seen that the field in the waveguide can be regarded as a superposition of two monochromatic waves which propagate in the forward and reverse directions with the phase velocity defined by Eq. (30), where $\omega = \hat{f}t$. Under certain conditions, expressions for \hat{f} and $\hat{\theta}$ can be in the form of Eqs. (27a) and (28a). In this case, the components of the vectors \underline{H} and \underline{E} are given by

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Electromagnetic Waves in Lossy Systems with Time-dependent Parameters

Eqs. (33) and (34). In this case, there exists only one nonmonochromatic wave whose amplitude is time-dependent. It can easily be shown that the above approximate and exact expressions for the field vectors can be generalised and extended to the propagation of several monochromatic waves. In particular, if there exists a modulated three-harmonic wave, the component E_y is expressed by Eq. (35), where m is the modulation index and Ω is the modulation frequency. Fig. 1 shows the vector diagram of the three components of the modulated wave expressed by Eq. (35). By examining Eq. (35) it is concluded that there exist a number of cross-sections in the waveguide where either frequency-modulation or amplitude-modulation is predominant. It is possible to determine the spatial period of this

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Electromagnetic Waves in Lossy Systems with Time-dependent Parameters

phenomenon. The authors express their gratitude to A.V. Gaponov and N.G. Denisov for useful discussions. There are 1 figure and 9 references: 2 English and 7 Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete
(Scientific Research Radiophysics Institute of Gor'kiy University)

SUBMITTED: March 16, 1960

Card 7/7

1111-09 WA(k)/EWT(1)/SEC(k)-2/T/SEC(k) 1111-09-1

Author: Karonopulo, Yi. G.

1111-09 On the theory of Raman emission in strong fields

1111-09 S. S. Karonopulo, V. V. Karonopulo, 1981, 31, 501

1111-09 TAGS: Raman effect, laser beam, light polarization, dipole, magnetic fields, etc.

ABSTRACT: In view of the much stronger electromagnetic fields made possible by the application of the laser beam to Raman scattering, the theory of Raman emission in strong fields is considered. It is assumed that the perturbation of the system is small. Furthermore, perturbation cannot take into account the saturation of the level populations in the case of a strong magnetic field. The results of the calculation are compared with the results of the theory of Raman emission in strong fields.

L 15180-65

ASSOCIATION NR: AP404826

4
The equations that describe the interaction of a field with a medium with account of the interaction of the field with a system with nonpolarizable particles (for example, and the stationary field of a medium with electric or magnetic moments is calculated under the assumption of electric (or magnetic) dipole interaction between the medium and the field. 'I thank M. V. Fayn, Ye. I. Yakubovich, and E. G. Yashchin for interest in the work and for stimulating discussions.' Orig. art. has: 30 formulas.

ASSOCIATION: Nauchno issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute at the Gor'kiy University)

SUBMITTED: 06Jan64

ENCL: 00

SUB CODE: OP

NR REF SOV: 004

OTHER: 005

Card 2/2

L 61849-65 EWA(k)/FED/ENT(1)/EEC(k)-2/T/EEC(h)-2/EAP(k)/EWA(m)-2/EWA(h)
 SCTE/IDP(c) WG
 ACCESSION NR: AP5020361 UR/0141/65/008/003/0493/0503
 621.378.3
 AUTHOR: Gurevich, G. L.; Khronopulo, Yu. G. 44
 TITLE: Some problems in the theory of two-photon processes
 SOURCE: IVUZ. Radiofizika, v. 8, no. 3, 1965, 433-503
 TOPIC TAGS: resonator, radiation, incoherent scattering, optic pumping, laser
 optics 25.144

ABSTRACT: Combination and double radiation are studied in a substance placed in a resonator with two natural optical frequencies, ω_1 and ω_2 . It is shown that an anti-Stokes process is possible under certain conditions in the case where the second working level is metastable, even in the absence of incoherent pumping. Excitation of a Stokes process in such a system takes place only in a definite external field amplitude range. If $\omega_1 + \omega_2 \approx \omega_2$, where ω_2 is the difference between the working levels of the system, stationary states with sufficient intensity of the external field are possible.

Card 1/2

L 63849-65

APPROVED FOR RELEASE: 03/13/2001

44 44 44 8
to express thanks to V. I. Bespalov, L. V. Postnikov, and V. M. Fayn for useful
"Orig. art. has: 15 formulas.

Nauchno-issledovatel'skiy radiofizicheskiy institut im. P. N. Lebedevskom
Scientific Research Radiophysics Institute

ENCL: 00

OTHER: 001

L 37924-66 FBD/EWT(1)/EEC(k)-2/T/EWP(k) IJP(c) WG

ACC NR: AP6022079

SOURCE CODE: UR/0141/66/009/003/0538/0544

AUTHOR: Butylkin, V. S.; Gurevich, G. L.; Kheyfets, M. I.; Khronopulo, Yu. G. 38

ORG: Scientific-research Institute of Radiophysics, Gor'kiy University
(Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Effect of the resonance field on the operation of a two-photon laser 25

SOURCE: IVUZ. Radiofizika, v. 9, no. 3, 1966, 538-544

TOPIC TAGS: laser theory, laser R and D, two photon laser

ABSTRACT: R. L. Garwin considered two-photon processes in a substance incorporated within the laser resonator (IBM J. Rand D, 8, 338, 1964); natural frequencies of the resonator were $\omega_1, \omega_2, \omega_3$; the field of near- ω_{12} frequency was assumed to be nonexistent. As the resonator practically always has a finite Q at ω_{12} , the present article examines possible effects of the ω_{12} resonance field on the laser operation. Integral equations describing the fields are added to material-system equations; the solutions are analyzed for these cases: (a) one of the fields is specified and (b) no field is specified. It is found that: (1) A resonator tuned to the frequency of transition between active levels of the substance may considerably impair the excitation conditions in a two-photon laser; (2) The number of excited particles required for the stationary generation of the combination field does not change substantially. Orig. art. has: 2 figures and 34 formulas. [03]

SUB CODE: 20 / SUBM DATE: 31Aug65 / ORIG REF: 005 / OTH REF: 001

Card 1/1 MCLP

UDC: 621.378.325

L 38104-66 FBD/EWT(1)/EEC(k)-2/T/EWP(k) IJP(c) WG

ACC NR: AP6022080

SOURCE CODE: UR/0141/66/009/003/0545/0549

AUTHOR: Butylkin, V. S.; Gurevich, G. L.; Kheyfets, M. I.; Khronopulo, Yu. G. 38
13ORG: Scientific Research Institute of Radiophysics, Gor'kiy University
(Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Generation of the second harmonic in a resonant laser 25

SOURCE: IVUZ. Radiofizika, v. 9, no. 3, 1966, 545-549

TOPIC TAGS: laser theory, laser R and D, nonlinear optics

ABSTRACT: As a strong ω -field exists in the resonator of conventional lasers and as the populations of active levels are inverted, a 2 ω -field may arise due to the anti-Stokes process in the laser active substance. Equations describing this process are set up and analyzed. It is found that the stationary generation of a 2 ω -field can materialize only with a sufficiently large (giant pulse) number of excited particles (10^{19} -- 10^{21}); the population difference of such an order can be obtained under pulsed-Q operating conditions. Even under the giant-pulse conditions, frequency doubling is possible only when the active medium meets some rigorous requirements: the quantity $|os|$ must be very large and the 2-1 transition must be highly forbidden, $|p_{12}| < 10^{-2}$. CGSE. Orig. art. has: 1 figure and 28 formulas. [03]

SUB CODE: 20 / SUBM DATE: 31Aug65 / ORIG REF: 003 / OTH REF: 001/ ATD PRESS: 5046

Card 1/1 MCLP

UDC: 621.378.325

ACC NR: AP6037080

SOURCE CODE: UR/0056/66/051/005/1499/1509

AUTHOR: Gurevich, G. L.; Khronopulo, Yu. G.

ORG: Institute of Radio Engineering and Electronics, Academy of Sciences SSSR
(Institut radiotekhniki i elektroniki Akademii nauk SSSR)

TITLE: The resonant parametric interaction of strong optical fields

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 5, 1966, 1499-1509

TOPIC TAGS: nonlinear optics, harmonic generation, parametric amplification

ABSTRACT: A theoretical study was made of the parametric interaction of three strong electromagnetic waves with frequencies ω_1 , ω_2 , and ω_3 which satisfy the condition $\omega_1 + \omega_2 = \omega_3$, where ω_3 is the absorption frequency of the substance. The equations derived to describe the above interaction in non-inverted and inverted systems allow for the saturation effect. Studies were made of the qualitative differences existing between resonant and nonresonant parametric interactions, the generation of the sum frequency, and the parametric division of frequency. The analytical expressions derived for the attendant field strengths were shown to depend essentially on the rate of the two-photon absorption of the two fields $E(\omega_1)$ and $E(\omega_2)$. The maximum conversion factor of $E(\omega_1)$ and $E(\omega_2)$ into $E(\omega_3)$ was also determined. The length at which a considerable energy transfer occurs was shown to depend

Card 1/2

ACC NR: AP6037080

on the particle lifetime of the working substance in an excited state, and the resonant parametric interaction was found to be less critical with respect to the mode-locking criterion than the nonresonant one. Numerical calculations were also made for a working substance consisting of impurities in a dielectric. Orig. art. has: 2 figures and 49 formulas.

SUB CODE: 20/ SUBM DATE: 25May66/ ORIG REF: 007/ OTH REF: 004/ ATD PRESS: 5107.

Card 2/2

S/598/61/000/006/023/034
D245/D303

AUTHORS: Khronov, A.D., Lukashin, V.I., and Reznichenko, V.A.

TITLE: Producing titanium and titanium alloys by refining crude anodes

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 6, 1961. Metallotermiya i elektrokhiimiya titana, 169 - 179

TEXT: The authors studied the electrolytic refining of binary Ti-Al alloys with Al contents of 4 - 40 % in order to find the optimum conditions for refining crude Ti alloys. Since the main component of the impure Ti obtained from ilmenite concentrates is Al, the behavior of Al during electrolysis was considered to be of particular interest. The electrolyte used was NaCl; in some experiments, up to 3 % lower Ti chlorides were added. It is shown that, with an alloy with 4.2 % Al, and low current density (0.45 amp/cm²) the Al content of Ti can be reduced to 0.15 %. Comparison of tests on refining pure Ti-Al alloys with crude Ti containing both Al and other

Card 1/2

Producing titanium and titanium ...

S/598/61/000/006/023/034
D245/D303

impurities showed that the latter reduce the electrochemical activity of the Al present. This is attributed to Fe and its effect on stabilizing the β -phase. To study the effects of Si, 5 to 60 % of the Al was replaced by Si, at low current densities, up to 1 amp/cm², the cathode deposit had a higher Fe content and a lower Al content than was found at higher current densities. Chemical analysis of fractions of the deposit showed that larger crystals had a lower Al content than smaller ones. Crystal growth is continuous throughout the refining process and, after an hour of the process, reductions of current efficiency and of e.m.f. are observed. There are 2 figures, 7 tables and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: R. Dean, Metal Industry, 1957, no. 9, 165 - 167. ✓

Card 2/2

ACC NR: AP6025593

SOURCE CODE: UR/0413/66/000/013/0032/0032

INVENTORS: Valik, I. L.; Khronov, L. I.; Shetalov, I. N.

ORG: none

TITLE: A method for using a vidicon with a persistent memory. Class 21, No. 183243

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 32

TOPIC TAGS: memory time, vidicon tube

ABSTRACT: This Author Certificate presents a method for using a vidicon tube with persistent memory, which provides a simultaneous reduction of the switching time lag and the photoelectric delay. In the time interval between the image readout and recording operations, the target of the vidicon tube is illuminated first by a light beam and then by a scan electron beam.

SUB CODE: 09/ SUBM DATE: 03Jan60

Card 1/1

UDC: 621.397.23

5

I. 09262-67 EMT(d)/EMP(c)/EMP(v)/EMP(k)/EMP(h)/EMP(1)

ACC NR: AP6029981

(A, N)

SOURCE CODE: UR/0413/66/000/015/0193/0193

INVENTORS: Putayn, D. P.; Gusev, A. I.; Filatov, G. V.; Dartau, A. N.; Mazayov, A. N.; Novak, G. A.; Yelagin, P. Ya.; Khvatov, A. I.; Dyukov, A. I.; Khropik, B. A.

ORG: none

TITLE: A shop for assembling large structures of flying machines. Class 62, No. 184138

14

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 193

TOPIC TAGS: construction machinery, aircraft

ABSTRACT: This Author Certificate presents a shop for assembling large structures of flying machines. The shop contains columns sunk into the foundations, horizontal beams fixed on top of the columns, cups with fixing devices, and clevises holding receptors and wedges. To shorten the assembly time and to rearrange the shop repeatedly, bearing plates are fixed to the columns, beams, and cups. These plates have a network of coordinating holes which receive pins connecting the plates to one another. The fixing devices of the cups are tied to the coordinating holes in the spacing strip placed in an aperture in the beam. The bottom of this

Card 1/2

UDC: 629.13.01/06

L 09262-67

ACC NR: AP6029981

aperture also contains coordinating holes for fixing the separating strip to the plate of the horizontal beam.

SUB CODE: 01/13/ SUBM DATE: 01Mar65

Khropik 13 A

TABLE 1 BOOK INFORMATION 807/397

Source. The machine-technology property level 1. E. Shchepanenko
Technological Property Leveling (High-Productivity
Auxiliary Processing Equipment) Moscow, Nauka, 1960. 176 p.
8,000 copies printed.

Processing Agency: Odeskstro po razvirovaniyu politicheskikh i
mestnykh snaryadov.

Re. (Title page): V. V. Kuznetsov, (Inside book): S. L. Martens;
Sov. M. I. P. Gerasimov; Revising Ed. for Literature on Metal-
working and Machine-Tool Construction (Machinists) V. V. Kuznetsov,
Revising.

Summary: This collection of articles is intended for technical personnel
engaged in the development of auxiliary equipment for metal processing.
CONTENTS: This collection contains articles dealing with modern machine-
tool auxiliary equipment, methods of manufacturing, and data on the in-
tegration of such equipment into production. The engineering and
economic aspects of the use of standardized auxiliary equipment are
also discussed. No personal data are mentioned. References follow
each article.

Summary: V. V. Kuznetsov: This book is intended for technical personnel
engaged in the development of auxiliary equipment for metal processing.
The author discusses the advantages of using machine tools for
producing fixtures assembled from standard parts and subassemblies.

Summary: V. V. Kuznetsov, V. A. Ponomarev. Experience gained in the use of
standardized fixtures in experimental and test production
of various types of machine tools and the various types of the assembly
of various types of machine tools. Working methods are also
discussed.

Summary: V. V. Kuznetsov. The author discusses the advantages of using machine tools for
producing fixtures assembled from standard parts and subassemblies.

Summary: V. V. Kuznetsov. The author discusses the advantages of using machine tools for
producing fixtures assembled from standard parts and subassemblies.

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producing fixtures assembled from standard parts and subassemblies.

Summary: V. V. Kuznetsov. The author discusses the advantages of using machine tools for
producing fixtures assembled from standard parts and subassemblies.

ATK HROPOV, M.S.
200-LITER BUBBLE CHAMBER (USSR)

Lomanov, M. F., A. G. Moshkovskiy, M. S. Khropov, and V. A. Shchegolev.
Pribery i tekhnika eksperimenta, no. 2, Mar-Apr 1963, 37-40.

S/120/63/000/002/007/041

The Institute of Theoretical and Experimental Physics has developed a freon bubble chamber which can be used for the observation of particle stopping within 80 cm. The chamber operates at 30 atm and 25.6°C and uses a mixture consisting of freon-12 (CCl_2F_2) and freon-13 (CClF_3) in a two-to-three ratio by weight. The duralumin chamber [see illustration], which has a 900-mm inside diameter, is provided with an organic glass (CT-1) window (5) sealed with flexible rubber (4), permitting the window to move vertically 30 mm. The conical outer container (7) is filled with water and connected by pipe (9) to the expansion mechanism. The chamber is illuminated by nine WKR-12 flash-tubes (20). Two cameras (17) with focal lengths of 55 mm are placed at the top of the container. Coil pipe (3) is connected to the TC-24 thermostat and maintains a chamber temperature constant within $\pm 0.1^\circ\text{C}$. The chamber sensitivity time is greater than 40 msec, the full cycle of operation is 13 sec, and expansion and compression times are 15 to 20 msec. In tests the chamber withstood some 10^4 test expansions, and 2500 test photos were obtained.

[WP]

Card 1/2

Aut. Report, P. #1
BERKUT, A.Ye.; GRAMMAKOV, A.G.; ORLOV, V.M.; KHROPOVA, P.M.

Manifestations of static electricity during the production of
oilcloth. Leg. prom. 17 no.12:29-32 D '57. (MIRA 11:1)
(Synthetic fabrics--Electric properties)

ALEKSEYEVA, Ye.F.; KIRILLOV, V.V.; LYATKOVSKAYA, N.M.; MALYSHEVA, T.D.;
ORLOV, V.M.; STEPANOV, A.S.; KHROPOVA, P.M.; CHERNENKO, M.I.;
GRAMMAKOV, A.G., prof., red.; SMIRNOV, P.S., tekhn. red.

[Manual on exercises in physics] Posobie k uprazhneniam po fizike.
Leningrad, Leningr. elektrotekhn. in-t im. V.I.Ul'ianova (Lenina).
Part. 1. [Mechanics. Molecular physics] Mekhanika, Molekuliarnaia
fizika. Sost. E.F.Alekseeva i dr. 1960. 75 p. (MIRA 14:10)
(Physics--Problems, exercises, etc.)

VOYTSEKHOVSKAYA, I.A., kand. fiziko-matematicheskikh nauk, dotsent;
REKALOVA, G.I., kand. fiziko-matematicheskikh nauk, dotsent;
KHROPOVA, P.M., assistant

Determination of the optimum parameters of an uncoupled antimony-indium photocell. Izv. LETI no.47:316-334 '62. (MIRA 16:12)

KVITKO, K.V.; KHROPOVA, V.I.

Ultraviolet induced and spontaneous mutations of *Chlorella vulgaris*
Beijer. Vest. LGU 18 no.9:150-156 '63. (MIRA 16:6)
(Algae) (Botany--Variation)
(Ultraviolet rays--Physiological effect).

NAREBUT, S.I.; KHROPOVA, V.I.

Effect of environment on the heterosis manifestation in the ontogeny of tomato hybrids. Nauch. dokl. vys. shkoly; biol. nauki no.3:177-183 '64 (MIRA 17:8)

1. Rekomendovana kafedroy genetiki i selektsii Leningradskogo gosudarstvennogo universiteta im. A.A. Zhdanova.

KHROPOVA, V.I.; KVITKO, K.V.; ZAKHAROV, I.A.

Comparative study of the mutagenic action of irradiations and ethylenimine on Chlorella. Issl. po gen. no.2:69-76 '64. (MIRA 18:4)

BROVKO, Aleksey Petrovich; VORONTSOV, V.G., retsenzent; YEREMIN
V.Ye., retsenzent; ZAKHAROV, A.P., retsenzent; KROPACHEV,
V.P., retsenzent; PASTUKHOV, N.V., retsenzent;
PEREGUDOV, V.V., retsenzent; PONOMAREV, V.A., retsenzent;
RUDEV, A.M., retsenzent; KHROPUNSKIY, Ye.A., retsenzent;
SMIRNOV, A.A., inzh., retsenzent

[Contact networks in strip mines] Kontaktnaya set' na
kartirakh. Moskva, Nedra, 1964. 207 p. (MIRA 18:2)

1. Inzhenerno-tehnicheskiye rabotniki Korkinskogo trest
ugol'nykh predpriyatiy (for all except Brovko).

1ST AND 2ND ORDER										3RD AND 4TH ORDER									
PROCESSES AND PROPERTIES INDEX																			
<p>M THE CONSTRUCTION OF SPECTROGRAPHIC APPARATUS. S.A. KERSHANOVSKY 11 (IZVEST. AKAD. NAUK S.S.S.R., 1941 (Pis.) 5, (2/3), 376-386). (In Russian.) Kh. describes three pieces of apparatus-steeloscope, ste lomster, and ultra violet spectrograph-which are already in production, and gives details of other apparatus which is projected.- MBV</p>																			
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>																			
1ST AND 2ND ORDER										3RD AND 4TH ORDER									

KHRSHANOVSKIY, S. A.

PA 53/49T103

USSR/Physics

Jul/Aug 48

Spectrum Analysis
Instruments

"Newly Constructed Spectral Apparatus," S. A.
Khrshanovskiy, 7 pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XII, No 4

Describes structural characteristics of following new instruments: a universal monochromator for the visible part of the spectrum (UM-1), a three-prism glass spectrograph ISP-51, an Abbe comparator IZA-2, a double spectroprojector DSP-1, and a unit for recording the turning angle of mirror used with galvanometers (PS-35).

FTS

53/49T103

KHRSHANOVSKIY, S. A.

USSR/Chemistry - Spectrum Analysis,
Equipment

Dec 50

"Industrial Types of Generators for Spectrum Analysis," S. A. Khrshanovskiy, Plant imeni OGPU

"Zavod Lab" No 12, pp 1513-1517

Describes constr with diagrams of 2 types: IG-2 condensed spark generator, and DG-1 ac-arc generator. DG-1 may be used in 3 ways for excitation with arc, spark and h-f spark. Design of both models provides for standarization of many parts and assemblies, considerably simplifying fabrication, repair and operation.

182T11

CA 3

Some new models of spectral apparatus. S. A. Khreshchinskii. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 14, 749 (1950); cf. C.A. 44, 3705d. S. Pakowar

CA

Industrial examples of generators for spectrum analysis.
S. A. Khrahanovskii. *Zavodskaya Lab.* 18, 1613-17(1954);
cf. *C.A.B.* 45-41204. — Circuit diagrams and constructional
features of the generators for spectrographic work are sup-
plied for generator ISP-1, IG-2 (improved version of above)
for spark methods, and generator IXG-1 for arc methods.
G. M. Kozolupoff

KIRSHANOVSKIY, S. A.

PHASE I Treasure Island Bibliographic Report

AID 171 - I

BOOK

Call No.: PD.S538

Authors: SMIRNOV, V. F., STRIGANOV, A. R., and KIRSHANOVSKIY, S. A.

Full Title: ORGANIZATION AND EQUIPMENT OF STANDARD SPECTRAL LABORATORIES

Transliterated Title: Organizatsiya i oborudovaniye tipovykh spektral'nykh laboratoriy

Publishing Data

Originating Agency: Academy of Sciences, USSR, Division of Physico-Mathematical Sciences, Committee on Spectroscopy

Publishing House: Publishing House of Academy of Sciences, USSR

Date: 1952

No. pp.: 117

No. copies: 4,000

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Tech. Ed.: None

Appraisers: Members of Committee on Spectroscopy:

V. K. Prokof'yev,

S. M. Rayskiy, A. K. Rusunov,

N. S. Sventitskiy,

V. G. Koritskiy,

S. L. Mandel'shtam, and

K. A. Sukhenko (Academician)

G. S. Landsburg (Chairman of the Committee)

Card 2/2

AID 171 - I

Call No.: PD.9538

Full Title: ORGANIZATION AND EQUIPMENT OF STANDARD SPECTRAL LABORATORIES

Text Data

Coverage: The authors describe various methods and apparatus used for spectral analysis in laboratories of the USSR and also give the classification, general arrangement, equipment inventory and kind of professional personnel for each type of laboratory. The spectrometers, spectrographs, and other instruments of which photographs and diagrams are given are exclusively of Soviet make.

The book may be of interest as indicating the scope and kind of equipment used in Soviet spectral laboratories, as well as the addresses of the distributing places where this equipment may be obtained.

Purpose: General information for designers and professional personnel of factory and institutional laboratories.

Facilities: For list of offices and shops in the USSR where laboratory equipment can be obtained, see p. 71.

No. Russian and Slavic References: 9(1945-51)

Available: Library of Congress

66185

SOV/146-58-5-20/24

~~24(4)~~ 24.3300

AUTHOR: Khrshanovskiy, S.A., Engineer

TITLE: Some Questions in Calculating Reflecting Spectrographs

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Priborostroyeniye, 1958, Nr 5, pp 141-152 (USSR)

ABSTRACT: In this article the author deals with some specific aspects of the calculation method of simple as well as complicated optical schemes. The author examines in detail: interrelation of basic parameters and of the geometrical elements commonly used in optical systems; ways to work out formulae to calculate dimensions and to estimate quickly the different variables of reflecting spectrographic systems. In 1940, D.S. Rozhdestvenskiy made the start for further successful research by creating a new type of reflecting spectrography. In the end the article describes spectrographs, which are the most commonly used type. They have vertical, spheric mirrors and are based on the "vertical symmetrical" scheme. Figure 1 shows two variations of this vertical symmetrical scheme. The

Card 1/2

66123

SOV/146-58-5-20/24

Some Questions in Calculating Reflecting Spectrographs

formulae 1-5 describes the way of the refracted ray falling on the mirror under varying angles. Figure 2 shows the diagram of the way, which the refracted bundle of rays takes in the reflecting spectrograph. The formulae 7-14 are used to calculate the angle of any given ray within the bundle. The following part of the article discusses certain aspects of the reflecting spectrograph. Figure 3 contains the diagram of the bundle of dispersing rays, whose way is shown in an exaggerated form. Figure 5 shows the general scheme of the inner construction of the reflecting objective seen in vertical and symmetrical sight. The formulae which the article contains can be used to calculate and examine the different variables of the spectrograph. There are 6 diagrams and 9 references, 7 of which are Soviet, 1 German and 1 English.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki
(Leningrad Institute of Fine Mechanics and Optics)

Card 2/2

4

24(7)
AUTHOR: Khrshanovskiy, S.A., Engineer SOV/146-58-6-10/16

TITLE: Some Questions on Computation of Mirror-Spectrographs

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Priborostroyeniye, 1958, Nr 6, pp 72-82 (USSR)

ABSTRACT: The present article deals with the computation of spectrographs built on the basis of a horizontal symmetrical layout. In figure 1, schematic diagram of such a layout is given. The basic values for calculations are: 1) the length of the entrance slit (s); 2) radius of the mirror spherical surface curvature (R); 3) distance (A) between the outgoing face of the dispersing element and the center (O) of the spherical surface; 4) dimensions of the face - its height (H) width (B) and length (l) - of the simultaneously photographed spectra section. The author analyzes 4 different types of spectrograph constructions: 1) spectrograph with one common central mirror; 2) spectrograph with one common eccentric mirror; 3) spectrograph with two separate mirrors of an equal diameter;

Card 1/2

Some Questions on Computation of Mirror-Spectrographs

SOV/146-58-6-10/16

4) monochromator or spectrometer with one common central mirror. The general condition for all these types is expressed by formula $R > A > \frac{R}{2}$. The further analysis of spectrograph constructions discloses that an increase of dispersing element projection enhances the quality of images. However, there are a number of factors which have to be taken into consideration in the case of prolongation of the dispersing component projection, namely: appearance of a perceptible inclination of the entrance slit and of the spectra focussing surface; elongation of the optical path and, as a consequence, increase of the spectrograph size, augmentation of image distortion; enlargement of mirror dimensions, etc. There are 5 diagrams and 8 references, 4 of which are Soviet, 2 American and 2 German.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute of Precision Mechanics and Optics)

SUBMITTED: August 21, 1958
Card 2/2

9.5300

S/035/60/000/010/009/021
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 10,
p. 23, # 9915

AUTHOR: Khrshanovskiy, S. A.

TITLE: A Device for Modelling Optical Layout of Spectral Instruments With
Diffraction Grating

PERIODICAL: Sb. statey, Leningr. in-t tochnoy mekhan. i optiki, 1958, No. 27,
pp. 94-104

TEXT: The author gives a classification of optical layouts of spectro-
graphs with flat diffraction grating and mirror focusing optics. A device is
described which makes it possible to model various layouts of mirror spectrographs
with flat and concave gratings, prisms and lens optics. Moreover, the device
makes it possible to vary in wide range the overall dimensions of the investi-
gated layouts and to work out effective methods of assembling and adjusting.
Image quality is studied both visually and photographically. The results of
testing several variants of spectrographs with flat grating are presented.

I. V. Peysakhson

Translator's note: This is the full translation of the original Russian abstract.
Card 1/1

24(7)

SOV/48-23-9-22/57

AUTHOR:

Khrshanovskiy, S. A.

TITLE:

A Mirror Spectrograph Producing Long Pictures. Study of the Optical System

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 9, pp 1100 - 1103 (USSR)

ABSTRACT:

With the mirror spectrographs hitherto in use, which had a reflecting diffraction grating and a focusing mirror-optical system photographs having a length of 200 to 220 mm were obtained, which was not sufficient for certain spectroscopical tasks. With a view of increasing the length of the pictures, various types of spectrographs with a plane grating were theoretically and experimentally investigated. First, the most frequently used types with vertical symmetry were examined (Fig 1) (Refs 5,6). When a given length is used, optical errors may be reduced by varying the distance between the grating and the mirror-optical system for plane photographic plates. By taking the curved focal plane into account, considerably greater lengths may be obtained. By means of the arrangement consisting of spherical mirrors (Fig 2), the reproducing quality of the

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A Mirror Spectrograph Producing Long Pictures.
Study of the Optical System

SOV/48-23-9-22/57

spectral lines in systems with which pictures of greater length may be obtained, was investigated. Pictures having a length of up to 1 meter could be investigated by means of this system. The grating of the type GOI with 600 grating lines per millimeter was investigated. The influence exercised by the various distances and picture-lengths upon the quality of lines in this grating are shown in table 1. In conclusion it is said to be very well possible to build spectrographs of the system described here, by means of which pictures of even greater lengths may be obtained. There are 2 figures, 1 table, and 8 references, 7 of which are Soviet.

Card 2/2

S/051/60/009/003/008/011
E201/E691

AUTHOR: Khrshanovskiy, S.A.

TITLE: Properties of Focal Surfaces of Mirror Spectrographs 21

PERIODICAL: Optika i spektroskopiya, 1960, Vol. 9, No. 3, pp. 399-406

TEXT: The author investigates theoretical focal surfaces of spectrographs with spherical camera mirrors. Focal curves (representing intersections of focal surfaces by meridional planes) are investigated as a function of the position of the dispersing element. Simple relationships are obtained which describe the behaviour of these curves in their central (working) parts. The paper is entirely theoretical. There are 3 figures and 14 references: 9 Soviet, 3 English and 2 German.

SUBMITTED: November 27, 1959

Card 1/1

ROZEN, Kh.; KHRSHCHONOVICH, V.G.

Isaak Grigor'evich Beilin; 1883-1965; an obituary. Biul. MOP
Otd. biol. 70 no. 6:150-153 N-D '65 (MIRA 19:1)

KHRUL', V. S. (Veterinary Doctor, Boguslav District, Kiev Oblast').

"Hemotherapy during dispepsia in newborn calves"...

Veterinariya, vol. 39, no. 8, August 1962 pp. 53

KHRULEV, A.

Simple method for fixing joints of sewer pipes. Stroitel'
no.1:26 Ja '60. (MIRA 13:5)
(Pipe joints)

KUSHNAREV, D.M., kand. tekhn. nauk; KHRULEV, I.Z., inzh.

Short delay electric detonators. Emerg. stroi. no. 6:100-103 '58.
(MIRA 12:11)

(Detonators)

KHRULEV, M.V.; KOGAN, P.S.; POTOLOVSKIY, L.A.

High temperature pyrolysis of the ethane fraction in pipe furnaces.
Khim.i. tekhn. topl. i masel 5 no.6:13-17 Je '60.

(MIRA 13:7)

(Petroleum--Refining) (Ethane)

FIOSHIN, M.Ya.; GIRINA, G.P.; VASIL'YEV, Yu.B.; KHRULEV, M.V.; POLIYEVKTOV,
M.K.; ARTEM'YEV, A.O.

Additions of alcohols and their effect on Kobe's electrosynthesis.
Dokl. AN SSSR 140 no.6:1388-1391 O '61. (MIRA 14:11)

1. Institut elektrokhimii AN SSSR. Predstavleno akademikom A.N.
Frumkinym.

(Chemistry, Organic--Synthesis) (Electolysis)

KHRULEV, Mikhail Valer'yanovich. Prinimal uchastiye TKACHENKO, G.VV,
kand. khim. nauk; BAGATUR'YANTS, K.G., red.; ROMM, R.S.,
red.

[Polyvinyl chloride] Polivinilkhlорid. Moskva, Izd-vo
"Khimiia," 1964. 262 p. (MIRA 17:8)

KHRULEV, N.P., gornyy master.

Enforced labor discipline guarantees the success. Bezop. truda y
prom. 2 no. 6:4-5 Je '58. (MIRA 11:7)
(Mining engineering--Safety measures)

KARMINSKIY, D.E., prof., doktor tekhn.nauk; KHRULEV, V.I., assistant;
BALASH, V.A., assistant

"Temperature conditions in braking." [Sbor.trud.] RIIZHT no.32:
190-230 '61. (MIRA 16:12)

L 6723-65. ENT(m)/EPF(c)/ENP(j)/T-2. Pc-4/Pr-4. RM

ACCESSION NR: AP4046475

8/0032/64/030/010/1270/1271

K. Khmulev, V. I.; Viktorov, I. V.

Travys laboratoriya, v. 30, no. 10, 1964.

material testing clamp, specimen holder, test specimen holder, plastics
meter ISH 2 tensometer

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of maintaining a secure grip on a plastic without incurring
the risk of tearing the material.

The movable support is a plate which is held in place by
The tenanometers are engaged along both ends of the specimen

0123-05

AP4046475

2

accuracy and measurement limitations. Results of test, with a polystyrene specimen
are displayed in the form of a load and deformation plot. Orig. art. has 2
figures.

Donetskii-na-Donu institut inzhenerov shchegoizirovannogo transporta

NO REF SOV: 000

OTHER: 000

L 6723-65

REFERENCE NO: AP4046475

ENCLOSURE: 01

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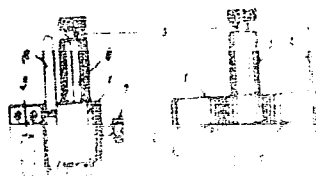


Fig. 1 Schematic of the system

1012

KHRULEV, V.M.
AUTHOR: Khrulev, V.M., Engineer, 28-4-12/35

TITLE: Improving Test Methods for Plywood (Usovershenstvovaniye metodov ispytaniy fanery)

PERIODICAL: Standartizatsiya, 1957, # 4, pp 45-48 (USSR)

ABSTRACT: Detailed information on new Soviet test methods is given along with information on the foreign methods of the USA, Canada, Germany, Britain, Australia.
The latest standard for plywood, ГОСТ 3916-55, in force since 1956, replaces old standards and introduces 12 kinds of wood instead of the former 4. It raises the minimum required separation resistance from 10 to 12 kg/cm². The four kinds of glue used are: formaldehyde-phenol type, urea-formaldehyde resin type, casein-albumine type and albuminetype.
The author's research institute is currently testing plywood with the purpose to further improve the quality. Some test results are given in a chart (p 47). One trial batch of plywood was made at the Ust'-Izhorskiy plant. A detailed specification of this batch is given. A part of this plywood was glued by special methods suggested by the Central Research Institute for Plywood and Furniture (TsNIIFM) (longer heating

Card 1/3

Improving Test Methods for Plywood

28-4-12/35

and higher temperature of the press plates). The minimum strength is not below 12 kg/cm^2 , the minimum required by the Soviet standard, and is also near the foreign standard specifications.

Two trial plywood molds for ash-foam-concrete blocks, made by the trust "Sevuraltyazhstroy" are mentioned. The behaviour of plywood is being investigated under conditions of soaking, steam-soaking, freezing, etc. The waterproof plywood $\Phi C \Phi$ loses only an insignificant part of its strength in these tests.

Coatings like the phenol-formaldehyde glue or the perchloro-vinyl varnish XCJ -1 appreciably increase the durability of albumen-glue plywood under steam-soaking.

Foreign standards are again referred to in connection with production and testing of plywood used for sheeting. The importance of research work already begun is emphasized in view of the planned wider application of plywood, particularly in building, i.e. for sheeting and for pre-fabricated houses.

There is 1 sketch and 1 table.

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Improving Test Methods for Plywood

28-4-12/35

ASSOCIATION: Central Research Institute for Building Structures of the Academy of Building and Architecture of USSR (Tsentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh konstruktsiy Akademii stroitel'stva i arkhitektury SSSR)

AVAILABLE: Library of Congress

Card 3/3

KHRULEV, V.M.

Quality control in plywood gluing. Der.prem. 6 no.6:13-15
Je '57.

(MLRA 10:8)

1.Akademiya stroitel'stva i arkhitektury SSSR.
(Gluing--Quality control)
(Plywood)

~~HRULEV, V.~~ m.
KHRULEV, V., insh.

Farm buildings constructed of plywood. Gor.i sel.stroi.
no.8/9:29-30 Ag-S '57. (MIRA 10:12)
(United States--Farm buildings) (Plywood)

KHULEV, V.M.

KHRULEV, V.M., inzh.

Using waterproof plywood for forms. Bet. 1 zhel.-bet. no.12:500-502
D '57. (MIRA 11:1)

(Concrete construction--Formwork) (Plywood)

KHRULEV, V.M., inzh.

Testing the durability of of plywood. Der. prom. 7 no.1:4-7 Ja '58.
(MIRA 11:1)

1. Tsentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh
konstruktsii.

(Plywood--Testing)

KHRULEV, V.M., inzh.

Testing physical and mechanical properties of plywood. Der.prom.
7 no.12:12-14 D '58. (MIRA 11:12)

1. TSentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh kon-
struktsiy.

(Plywood--Testing)

KHURULOV, V.M., insh.

Using plywood in housing construction abroad. Biul. stroi. tekhn. 15
no.2:32-35 P '58. (MIRA 11:2)

1. Tsentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh kon-
struktsiy Akademii stroitel'stva i arkhitektury.
(Plywood) (Buildings, Prefabricated)

AUTHOR: Khrulev, V.M., Engineer SOV/98-58-12-16/21
TITLE: The Use of Plywood Casings (Primeneniye fanernoy opalubki)
PERIODICAL: Gidrotekhnicheskoye stroitel'stvo, 1958, ²¹Nr 12, pp 49 -
52 (USSR)
ABSTRACT: This is a description of the use of plywood casings in the construction of hydrotechnical structures, port installations etc in the US and Canada. There are 3 photos and 4 English references.

Card 1/1

KHRULEV, V.M., Cand Tech Sci -- (diss) "Study of the durability and strength of construction plywood." M_gs, 1959, 24 pp with drawings (Acad of Construction and Architecture USSR. Central Sci Res Inst of Building Construction) 150 copies (KL, 36-59, 116)

- 59 -

KHRULEV, V.M.

Rated tension and compression characteristics of wood veneer.
Der.prom. 8 no.12:14-16 D '59. (MIRA 13:5)

1. Tsentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh
konstruktsiy.
(Veneers and veneering)